INDEX TO VOL. XCIV

Alphabetical Table of Contents of Authors

AMERICAN SOCIETY OF NATURALISTS, Reports of the Committee on Policy, Secretary, Treasurer, and Editor, 313

BERESKIN, B., and W. F. HOLLANDER, Bithorax and heterosis effects on egg yield in *Drosophila melanogaster*, 405

BIRCH, L. C., The genetic factor in population ecology, 5

BISTIS, GEORGE N., The concept of heterokaryosis in the fungi: The historical record, 443

BROWER, JANE VZ., Experimental studies of mimicry. IV. The reactions of starlings to different proportions of models and mimics, 271

See L. P. BROWER

BROWER, L. P., JANE VZ. BROWER and P. W. WESTCOTT, Experimental studies of mimicry. 5. The reactions of toads (*Bufo terrestris*) to bumblebees (*Bombus americanorum*) and their robberfly mimics (*Mallophora bomboides*) with a discussion of aggressive mimicry, 343

BURNETT, THOMAS, Interactions in insect populations, 201

CROW, JAMES F., and NEWTON E. MORTON, The genetic load due to mother-child incompatibility, 413

CURTIS, A. S. G., Cell contacts: some physical considerations, 37

DUNBAR, M. J., The evolution of stability in marine environments. Natural selection at the level of the ecosystem, 129

DUNN, L. C., Variations in the transmission of alleles through egg and sperm in *Mus musculus*, 385

EHRMAN, LEE, A preliminary study of mating behavior in *Drosophila paulistorum*, 189

ERRERA, MAURICE, Cellular radiation effects, 111

FRANK, PETER W., Prediction of population growth form in *Daphnia pulex* cultures, 357

GABRIEL, M. L., Primitive genetic mechanisms and the origin of chromosomes, 257

GOODMAN, MORRIS, On the emergence of intraspecific differences in the protein antigens of human beings, 153

The species specificity of proteins as observed in the Wilson comparative analyses plates, 184

HAIRSTON, NELSON G., FREDERICK E. SMITH and LAWRENCE B. SLOBODKIN, Community structure, population control and competition, 421

HOENIGSBERG, H. F., and S. KOREF SANTIBANEZ, Observations on the sexual behavior of *Drosophila equinoxialis* and *Drosophila prosaltans*, 382

HOLLANDER, W. F., See B. BERESKIN

HUTCHINSON, FRANKLIN, Radiation inactivation of molecules in cells, 59

Reply by Dr. Hutchinson, 442

JONES, D. F., The genotype as the sum of plasmatype and chromotype, 181

KLOPFER, P. M., and R. H. MacARTHUR, Niche size and faunal diversity, 293

KOLMAN, WILFRED A., The mechanism of natural selection for the sex ratio, 373

KURTZ, Jr., E. B., Biochemistry of adaptation in plants to environment, 237

LASKOWSKI, WOLFGANG, See WERNER STEIN

MacARTHUR, R. H., On the relative abundance of species, 25

On Dr. Birch's article on population ecology, 313

See P. M. KLOPFER

McKINNELL, ROBERT GILMORE, Transplantation of *Rana pipiens* (*kandiyohi* dominant mutant) nuclei to *R. pipiens* cytoplasm, 187

McMILLAN, CALVIN, Ecotypes and community function, 245

MORTON, NEWTON E., See JAMES F. CROW

NANNEY, D. L., Microbiology, developmental genetics and evolution, 167

NELSON, ERIC, See MARVIN B. RITTENBERG

PANDEY, KAMLA KENT, Incompatibility system in *Theobroma cacao*, 379

POLLARD, ERNEST, Theoretical aspects of the effect of ionizing radiation on the bacterial cell, 71

PUCK, T. T., The action of radiation on mammalian cells, 95

QUASTLER, HENRY, Introduction to symposium on theoretical radiobiology, 57
RITTENBERG, MARVIN B., and ERIC L. NELSON, Macrophages, nucleic acids, and the induction of antibody formation. A review, 321
RUBEN, LAURENS N., Further studies on implant-induced supernumerary limb formation in urodeles, 427
SAMPSON, D. R., An hypothesis of gene interaction at the *S* locus in self-incompatibility systems of angiosperms, 283
SANTIBANEZ, S. KOREF, See H. F. HOENIGSBERG
SEARS, PAUL B., The place of ecology in science, 193
SLOBODKIN, L. B., Ecological energy relationships at the population level, 213
See NELSON G. HAIRSTON
SMITH, FREDERICK E., See NELSON G. HAIRSTON
STEIN, WERNER, and WOLFGANG LASKOWSKI, Remarks on Dr. Hutchinson's paper on radiation, 441
TANTAWY, A. O., and M. O. VETUKHIV, Effects of size on fecundity, longevity and viability in populations of *Drosophila pseudoobscura*, 395
VAN VALEN, L., Nonadaptive aspects of evolution, 305
VETUKHIV, M. O., See A. O. TANTAWY
WESTCOTT, P. W., See L. P. BROWER
WHITE, M. J. D., Are there no mammal species with XO males—and if not, why not?, 301
WILLIAMS, C. B., The range and pattern of insect abundance, 137
WOLFF, SHELDON, Radiation studies on the nature of chromosome breakage, 85
WOLSKY, A., and ROZALINA ZAMORA, The structure of the "pearl" eye of *Latheticus oryzae*, 309
YOON, CHAI H., Genetic and nongenetic factors affecting the quivering condition in mice, 435
ZAMORA, ROZALINA, See A. WOLSKY

Subject Index

ABO locus, 413
abundance,
of passarines, 293
adaptation,
chemical basis, 237
community, 248
Adelina triboli, 203
age of mother,
effect on Qv mice, 440
alleles, 385
American Society of Naturalists,
presidential address, 193
symposium, 201
committee on policy, 315
amitotic reproduction, 259
ancestral organism, 260
Andropogon gerardi, 252
angiosperms, 283
antibody formation, 321
antigens, 153, 327
Aphidae, 15

biochemistry,
of adaptation, 237
Bithorax, 405
blood groups, 413
Bodemer, 429
Bombus americanorum, 343
"bottleneck" gene, 409
Bouteloua gracilis, 251
Braden, 390
Bufo terrestris, 343
bumblebees, 343
Burgeff, 443

cell contact, 37
interaction, 47
reaggregation, 48
cell division, 117, 261
cell membrane, 115
cellular differentiation, 120
cellulase, 238
Cepaea nemoralis, 18
Chlamydomonas reinhardi, 223
chromosomes,
breakage, 85
origin, 257
sex, in mammals, 301
chromotype, 181
climate,
toleration, 205
community structure, 421
competition, 421
control of plants,
biochemical, 237
cytolytic products, 428
cytoplasmic components, 115

Dacus tryoni tryoni, 15
Dahlbominus fuscipennis, 207

Daphnia pulex, 223, 357
differentiation,
  nucleic acids, 332
DNA, 66, 90, 441
dominance, 284
dragonflies, 348
drift, 17
drones, 15
Drosophila equinoxialis, 382
Drosophila melanogaster, 16, 405
Drosophila paulistorum, 189
Drosophila persimilis, 398
Drosophila prosaltans, 382
Drosophila pseudoobscura, 15, 395

ecology,
  efficiency, 217
  energy relationships, 213
  in science, 193
  population, 5, 313
ecosystem, 129
ecotypes,
  in community function, 245
efficiency,
  ecological, 214
  growth, 229
  population, 220
egg production in Drosophila,
  relation to longevity, 399
  relation to size, 396, 405
embryonic development, 122
Encarsia formosa, 204
entropy, 214
environment,
  marine, 129
enzymes,
  inactivation, 63
Escherichia coli, 71
eye,
  "pearl" mutation, 309
evolution,
  non-adaptive, 305
extinction, 17

frog, 427
fungi, 443

gamma globulin, 154
genetic load, 413
genetics,
  developmental, 167
Gonodontis bidentata, 18
grain weevils, 16
grasslands, 250
growth,
  effect of radiation on, 117
Gruneberg, 435

Hansen and Smith, 443
heterokaryosis, 443
heterosis, 405
heterotroph hypothesis, 268
homeostasis,
  epigenetic, 169
homografts, 428
host-parasite,
  interaction, 203
  searching, 207
Hutchinson, 441

immunobiology, 427
implantation, 427
inbreeding, 415
incompatibility,
  load, 413
  mother-child, 413
  substances, 283
inductor,
  post embryonic, 430
insects,
  abundance, 137
  populations, 201, 208
Interactions in Nature,
  symposium, 201
interspecific differences, 153

Joly, 38

kandiyobi dominant mutant, 187
kinetics,
  of cell function, 76

Latheticus oryzae, 309
limb formation,
  supernumerary, 427
linkage,
  origin, 266
longevity,
  in Drosophila, 395
Lucilia cuprina, 15
Lymantria monacha, 18
lymphocytes, 325
lysosomes, 113

macrophages, 321
Mallophora bomboides, 343
mammalian cells, 95
mating behavior, 189
mealworms,
  as mimics, 272
melanism, 18
Meliponidae, 15
microbiology, 167
microsomes, 114
Microtus agrestis, 17
mimicry, 271
  aggressive, 344
  Batesian, 352
  experimental studies, 343
morphogenesis, 429
motility,
  of cells, 119

mouse, 385, 435
muscular incoordination, 435
muskrats, 14
mutation,
  UV-induced, 331

Neurospora crassa, 237
niche size, 293
nucleic acids, 321

oscillation, 130
overdominance, 409
oxidative phosphorylation, 111
oxygen effects,
  on irradiated cells, 67

Pachydiplax longipennis, 348
pantothenate-synthesizing enzyme, 239
passerines, 293
plasma cells, 325
plasmatype, 181
pneumococci, 67
pollen, 283, 379
polymorphism, 14
polyploidy, 264
population,
  competition, 423
  dynamics, 198
  growth, 357
  peripheral, 19
  predation, 422
Prigogine's theorem, 217
protein, 87, 153, 331

quivering,
  in mice, 435

radiation, 57
radiomimetic agents, 330
Rana nigromaculata, 188
Rana pipiens, 187
ratios,
  abnormal, 386
  transmission, 385
regeneration, 430
RNA, 78, 332
robberfly mimics, 343

S allele interaction, 283, 379
selection, 129
  natural, 373
self-incompatibility, 379
serotype transformation, 175
sex-ratio, 373, 400
sexual behavior,
  of Drosophila, 382
sexuality,
  origin, 267
size,
  in Drosophila, 395
species,
  numbers, 9
starlings, 271
Stipa spartea, 250
Sturnus vulgaris L., 271
subcellular particles, 328
surface rheology, 37
survival curves,
  single cell, 95
symposium,
  Theoretical radiobiology, 57
  Interactions in nature, 201

target theory, 68
temperature, 205, 395
  mutants, 237
Tenebrio molitor L., 271
territoriality, 14
Theobromo cacao, 379
Theoretical radiobiology,
  symposium, 57
T locus, 386
toads, 343
transmission ratios, 385
Trialeurodes vaporarium, 204
Tribolium confusum, 16, 203

ultraviolet radiation, 104
urodele, 427

variation,
  ecotypic, 246
viability,
  of Drosophila, 395

waltzer-shaker, 435
Wilson analyses plates, 184

xenografts, 427
x-irradiated human cells, 95
x-ray inactivation,
  of yeast, 441

yeast cells,
  radiation effects on, 441, 442